CLAIMS:

1.   A visual display system for displaying calligraphic
        light points (CLPs) on a two-dimensional display,
        comprising:

        a processor for replacing a color portion of data
            characterizing the respective CLPs with digital
            information;

        a graphical processing unit (GPU) for mapping
            three-dimensional coordinates of the CLPs into
            a two-dimensional display space, determining
            whether the respective CLPs are visible with
            respect to a fixed point in front of the two-
            dimensional display, and returning an
            indication of same;

        an occlusion counter for receiving the indications
            and incrementing a data store used to control a
            display of the CLPs in accordance with the
            digital information; and

        means for computing display characteristics of the
            respective CLPs in accordance with the contents
            of the data store.

2.   A visual display system as claimed in claim 1
        wherein the GPU comprises a commercially available
        unit adapted to perform three-dimensional raster
        image processing.

3.   A visual display system as claimed in claim 2
        wherein the processor is adapted to change a

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content of a color buffer base pointer address
register of the GPU.

4. A visual display system as claimed in claim 1
wherein the GPU is adapted to operate in a first
mode in which they return the indication when a CLP
is visible with respect to the fixed point and a
second mode in which it returns the indication when
a CLP is not visible with respect to the fixed
point.

5. A visual display system as claimed in claim 1
wherein the processor is adapted to compute a
percentage of the CLPs that were visible in a
previous frame displayed by the visual system and
further adapted to select a mode of operation for
the GPU based on the percentage computed.

6. A visual display system as claimed in claim 1
wherein the occlusion counter comprises a field
programmable gate array.

7. A visual display system as claimed in claim 1
wherein the occlusion counter comprises a digital
signal processor.

8. A visual display system as claimed in claim 1
wherein the subpixel counter comprises an
application-specific integrated circuit.

9. A visual display system as claimed in claim 1
wherein the means for computing comprises a

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calligraphic subsystem comprising means for computing a color attenuation of each CLP that is visible with respect to the fixed point.

10. A method of displaying a calligraphic light points (CLPs) on a two-dimensional display, comprising steps of:

   replacing a color portion of data characterizing the respective CLPs with digital information;

   mapping three-dimensional coordinates of the respective CLPs into a two-dimensional space;

   determining whether the respective CLPs are visible with respect to a fixed point in front of the two-dimensional display and returning an indication of same;

   incrementing a data store used to control a display of the respective CLPs as the respective indications are returned, in accordance with the digital information; and

   computing display characteristics of the respective CLPs in accordance with the contents of the data store.

11. A method as claimed in claim 10 wherein the step of incrementing comprises using the digital information as an index into the data store and incrementing a portion of the data store indexed thereby.

12. A method as claimed in claim 10 wherein the step of displaying comprises displaying the CLP over an underlying two dimensional graphical display to provide increased intensity to the display at the coordinates corresponding to the CLP.

13. A graphical processing unit (GPU) adapted to accept a series of three-dimensional data points each containing a color value and map them to a two-dimensional display space,

   wherein the color values of the data points provided to the GPU may be replaced by digital information,

   whereby the mapped two-dimensional data points may be stored according to the digital information provided in the data point.

14. A data point comprising a coordinate portion and a color portion for processing by a graphical processing unit,

   wherein the color portion stores digital information so that the processed data point may be stored in a data store according to the digital information provided in the color portion.

15. A data point as claimed in claim 14, wherein the information identifies the data point.